

**MODIFICATION OF AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

**City of Marlborough**

is authorized to discharge from the facility located at

**Marlborough Westerly Waste Treatment Works  
Boundary Street  
Marlborough, MA 01752**

to receiving water named **Assabet River**

in accordance with effluent limitations, monitoring requirements and other conditions set forth in the permit signed on May 26, 2005, with the following changes as set forth herein and listed as follows:

**\* replace page 2 through page 6 of the May 26, 2005 permit with page 2 through page 6 contained in this modification.**

This permit modification shall become effective on (See **\*\* below**)

This permit modification and the authorization to discharge expire on November 25, 2010.

This permit modification consists of 6 pages.

Signed this    day of

\_\_\_\_\_  
Director  
Office of Ecosystem Protection  
Environmental Protection Agency  
Boston, MA

\_\_\_\_\_  
Director  
Division of Watershed Management  
Department of Environmental Protection  
Commonwealth of Massachusetts  
Boston, MA

**\*\* This permit will become effective on the date of signature if no comments are received during public notice. If comments are received during public notice, this permit will become effective no sooner than 30 days after signature.**

## PART I

A.1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number **001**, treated effluent to the Assabet River. Such discharges shall be limited and monitored as specified below.

<u>EFFLUENT CHARACTERISTIC</u>				<u>EFFLUENT LIMITS</u>			<u>MONITORING REQUIREMENTS</u>	
<u>PARAMETER</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>MEASUREMENT FREQUENCY</u>	<u>SAMPLE<sup>3</sup> TYPE</u>
FLOW	*****	*****	*****	2.89 MGD <sup>1</sup> 4.15 MGD <sup>1</sup>	*****	*****	CONTINUOUS	RECORDER
FLOW <sup>1</sup>	*****	*****	*****	Report MGD	*****	Report MGD	CONTINUOUS	RECORDER
CBOD <sub>5</sub> <sup>2</sup> (April 1- October 31)	362 lbs/day	362 lbs/day	603 lbs/day	15 mg/l	15 mg/l	25 mg/l	2/WEEK	24-HOUR COMPOSITE <sup>3</sup>
CBOD <sub>5</sub> <sup>2</sup> (November 1 - March 31)	603 lbs/day	964 lbs/day	Report lbs/day	25 mg/l	40 mg/l	Report lbs/day	2/WEEK	24-HOUR COMPOSITE <sup>3</sup>
TSS <sup>2</sup> (April 1- October 31)	362 lbs/day	362 lbs/day	603 lbs/day	15 mg/l	15 mg/l	25 mg/l	2/WEEK	24-HOUR COMPOSITE <sup>3</sup>
TSS <sup>2</sup> (November 1 - March 31)	723 lbs/day	1085 lbs/day	Report lbs/day	30 mg/l	45 mg/l	Report mg/l	2/WEEK	24-HOUR COMPOSITE <sup>3</sup>
pH RANGE <sup>4</sup>	6.5 - 8.3 SU SEE PERMIT PAGE 6 OF 14, PARAGRAPH I.A.1.b.						3/DAY	GRAB
TOTAL CHLORINE RESIDUAL <sup>5,6</sup>	*****		*****	28 ug/l (22 mg/l) <sup>1</sup>	*****	48 ug/l (39 mg/l) <sup>1</sup>	2/DAY	GRAB
FECAL COLIFORM <sup>4,7</sup>	*****		*****	200/100 ml	*****	400/100 ml	3/WEEK	GRAB
DISSOLVED OXYGEN (April 1- October 31)	NOT LESS THAN 5.0 mg/l						1/DAY	GRAB
WHOLE EFFLUENT TOXICITY SEE FOOTNOTES 8, 9, 10 and 11	Acute LC <sub>50</sub> ≥ 100% Chronic C-NOEC ≥ 40% (49%) <sup>1</sup>						4/YEAR	24-HOUR COMPOSITE <sup>3</sup>

A.1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number **001**, treated effluent to the Assabet River. The discharge shall be limited and monitored as specified below.

<u>EFFLUENT CHARACTERISTIC</u>				<u>EFFLUENT LIMITS</u>			<u>MONITORING REQUIREMENTS</u>
<u>PARAMETER</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>MEASUREMENT FREQUENCY</u>
AMMONIA-NITROGEN (June 1 - October 31)	Report lbs/day	Report lbs/day	72.3 lbs/day	2 mg/l	2 mg/l	3 mg/l	2/WEEK
AMMONIA-NITROGEN (November 1 - May 31)	Report lbs/day	Report lbs/day	*****	10.0 mg/l <sup>12</sup>	Report mg/l	*****	1/WEEK
TOTAL PHOSPHORUS (April)	2.4 lbs/day	*****	4.8 lbs/day	0.1 mg/l <sup>13,14</sup>	*****	0.2 mg/l	3/WEEK
TOTAL PHOSPHORUS (May 1 - October 31)	2.4 lbs/day	*****	Report lbs/day	0.1 mg/l <sup>13,14</sup>	*****	Report mg/l	3/WEEK
PHOSPHORUS, TOTAL (November 1 - March 31)	24 lbs/day	*****	Report lbs/day	1.0 mg/l <sup>15</sup>	*****	Report mg/l	1/WEEK
ORTHO PHOSPHORUS, DISSOLVED (November 1 - March 31)	Report lbs/day	*****	Report lbs/day	Report mg/l	*****	Report mg/l	1/WEEK
TOTAL ALUMINUM	5.3 lbs/day	*****	Report lbs/day	218 ug/l	*****	Report mg/l	1/MONTH
TOTAL COPPER <sup>16</sup>	0.7 lbs/day	*****	1.1 lbs/day	30 ug/l	*****	44 ug/l	1/MONTH
TOTAL NICKEL	1.8 lbs/day	*****	Report mg/l	73 ug/l	*****	Report mg/l	1/MONTH

All sampling shall be representative of the effluent that is discharged through outfall 001 to the Assabet River. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of every month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report that is submitted to EPA. In addition, all samples shall be analyzed using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136.

## Footnotes:

1. This is an annual average limit, which shall be reported as a rolling average. The first value will be calculated using the monthly average flow for the first full month ending after the effective date of the permit and the eleven previous monthly average flows. Each subsequent month's DMR will report the annual average flow that is calculated from that month and the previous 11 months. The monthly average and maximum daily flows for each month shall also be reported.

The permittee is required to comply with the following as a condition of this permitted flow increase:

- a. The permittee agrees to participate in a comprehensive evaluation of water conservation and/or water reuse opportunities to be conducted by the Massachusetts Office of Technical Assistance. The analysis will include audits of significant water users in Marlborough and Northborough and will identify and recommend opportunities for conservation and reuse.
  - b. The permittee agrees work with the MassDEP and EPA in cooperation with the Army Corps of Engineers to further an understanding of the results of the Corps' analysis of improvements that could be made to the Assabet River's water quality through addressing sediments and/or dam removal/modifications.
2. Sampling required for influent and effluent.
  3. A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during a consecutive 24-hour period (e.g. 0700 Monday- 0700 Tuesday).
  4. Required for state certification.
  5. The minimum level (ML) for total residual chlorine is defined as 20 ug/l. This value is the minimum level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G, or USEPA Manual of Methods of Analysis of Water and Wastes, Method 330.5. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 20 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 20 ug/l or less shall be reported as zero on the discharge monitoring report.
  6. Chlorination and dechlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine or dechlorination chemicals occurred. The Permittee shall comply with this requirement, consistent with the schedule for the Facility upgrade contained in Section H below.
  7. Fecal coliform discharges shall not exceed a monthly geometric mean of 200 colony forming units (cfu) per 100 ml, nor shall they exceed 400 cfu per 100 ml as a daily maximum. This monitoring shall be conducted concurrently with the TRC sampling.
  8. The permittee shall conduct chronic (and modified acute) toxicity tests four times per year. The chronic test may be used to calculate the acute LC<sub>50</sub> at the 48 hour exposure interval. The permittee shall test the daphnid, Ceriodaphnia dubia and the fathead minnow, Pimephales promelas. Toxicity test samples shall be collected

during the second week of the months of March, June, September and December. The test results shall be submitted by the last day of the month following the completion of the test. The results are due April 30<sup>th</sup>, July 31<sup>st</sup>, October 31<sup>st</sup> and January 31<sup>st</sup>, respectively. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit.

Test Dates Second Week in	Submit Results By:	Test Species	Acute Limit LC <sub>50</sub>	Chronic Limit C-NOEC
March June September December	April 30 <sup>th</sup> July 31 <sup>st</sup> October 31 <sup>st</sup> January 31 <sup>st</sup>	<u>Ceriodaphnia dubia</u> (daphnid) <u>Pimephales promelas</u> (fathead minnow)	≥ 100% ≥ 100%	≥ 40% (49%) ≥ 40% (49%)

9. The LC<sub>50</sub> is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
10. C-NOEC (chronic-no observed effect concentration) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the test results exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, the permittee must report the lowest concentration where there is no observable effect. The "40% (49%) or greater" limit is defined as a sample which is composed of 40% (49%) (or greater) effluent, the remainder being dilution water. The 49% effluent number reflects the revised dilution value at 4.15 MGD. This is a maximum daily limit.
11. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in **Attachment A Section IV., DILUTION WATER** in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required in **Attachment A**, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called "Guidance Document") which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee shall revert to obtaining approval as outlined in **Attachment A**. The "Guidance Document" has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA's Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this "Guidance Document" will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment A**.
12. The Permittee shall comply with the winter period ammonia limit in accordance with the facility upgrade schedule contained in Section H below. In the interim, the Facility shall be operated in order to maintain nitrification through the winter period whenever feasible.
13. The permittee shall comply with the 0.1 mg/l total phosphorus limit in accordance with the schedule contained in Section H. below. Upon the effective date of the permit, and until the date specified in Section H below for compliance with the total phosphorus final limit of 0.1 mg/l, an interim limit of 0.75 mg/l shall be met and

monitoring shall be conducted twice per week.

14. The total phosphorus limit for the month of April is a median limit (2.4 lb/day when the 2.89 MGD average monthly flow is exceeded). The total phosphorus limit for May - October is a 60 day rolling average limit (also 2.4 lb/day when the average monthly flow of 2.89 MGD is exceeded). The 60 day average value for each day in a given month, beginning on the 60<sup>th</sup> day after May 1, must be calculated and the highest 60 day average value for that month must be reported on the monthly discharge monitoring report (DMR). For the month of May, the monthly average value shall be reported with the DMRs. Consistent with Section B.1 of Part II of the Permit, the Permittee shall properly operate and maintain the phosphorus removal facilities in order to obtain the lowest effluent concentration possible. The total phosphorus limit for the period from November 1 to March 31 is an average monthly limit.
15. The Permittee shall comply with the 1.0 mg/l monthly average total phosphorus limit within one year of the issuance date of the permit. The maximum daily concentration and loading values reported for dissolved ortho phosphorus shall be the values from the same day that the maximum daily total phosphorus concentration and loading values were measured. The permittee is required to report monthly to both EPA and the MassDEP on its efforts to meet this limit.
16. The minimum level (ML) for copper is defined as 3 ug/l. This value is the minimum level for copper using the Furnace Atomic Absorption analytical method (EPA Method 220.2). For effluent limitations of less than 3 ug/l, compliance/non-compliance will be determined based on the ML from this method, or another approved method that has an equivalent or lower ML, one of which must be used. Sample results of 3 ug/l or less shall be reported as zero on the Discharge Monitoring Report.

Part I.A.1. (Continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
- b. The pH of the effluent shall not be less than 6.5 nor greater than 8.3 at any time.
- c. The discharge shall not cause objectionable discoloration of the receiving waters.
- d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
- e. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.
- f. The results of sampling for any parameter above its required frequency must also be reported.